

# **EXHIBIT 7**

**(Redacted Pursuant to  
Plaintiffs' Motion to Seal)**

1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION

4 ----- )  
5 ) Civil Action No.  
6 ) 5:16-cv-10444-  
In re: Flint Water Cases ) JEL-MKM  
7 ) (consolidated)  
8 )  
9 ) Hon. Judith E. Levy  
Mag. Mona K. Majzoub  
10 )  
11 Elnora Carthan, et al. v. )  
Governor Rick Snyder, et al. ) Civil Action No.  
12 ) 5:16-cv-10444-JEL-  
13 ----- ) MKM

14  
15 HIGHLY CONFIDENTIAL  
16 REMOTE VIDEOTAPED DEPOSITION OF  
17 WILLIAM BITHONEY, M.D.

18 November 5, 2020

19 VOLUME I

20 Remote videotaped deposition of  
21 WILLIAM BITHONEY, M.D., conducted at the location  
22 of the witness in Fayetteville, Georgia, commencing  
23 at 9:05 a.m., on the above date, before CORINNE T.  
24 MARUT, C.S.R. No. 84-1968, Registered Professional  
Reporter, Certified Realtime Reporter and Notary  
Public.

25 GOLKOW LITIGATION SERVICES  
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15 VEOLIA WATER NORTH AMERICAN OPERATING SERVICES:

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## 1 I N D E X

2 WILLIAM BITHONEY, M.D. EXAMINATION

3 BY MR. ROGERS..... 9

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5

## 6 E X H I B I T S

7 BITHONEY DEPOSITION EXHIBIT MARKED FOR ID

8 No. 1 Notice of Taking Audio-Visual 33  
Deposition

9

10 No. 2 Curriculum Vitae, 34  
William G. Bithoney, MD, FAAP

11 No. 3 Testimony List 35

12 No. 4 Invoices produced from William 242  
G. Bithoney, MD to Corey  
13 Stern, Levy Konigsberg

14 No. 5 37

15 No. 6 38

16 No. 7 38

17 No. 8 39

18 No. 9 131

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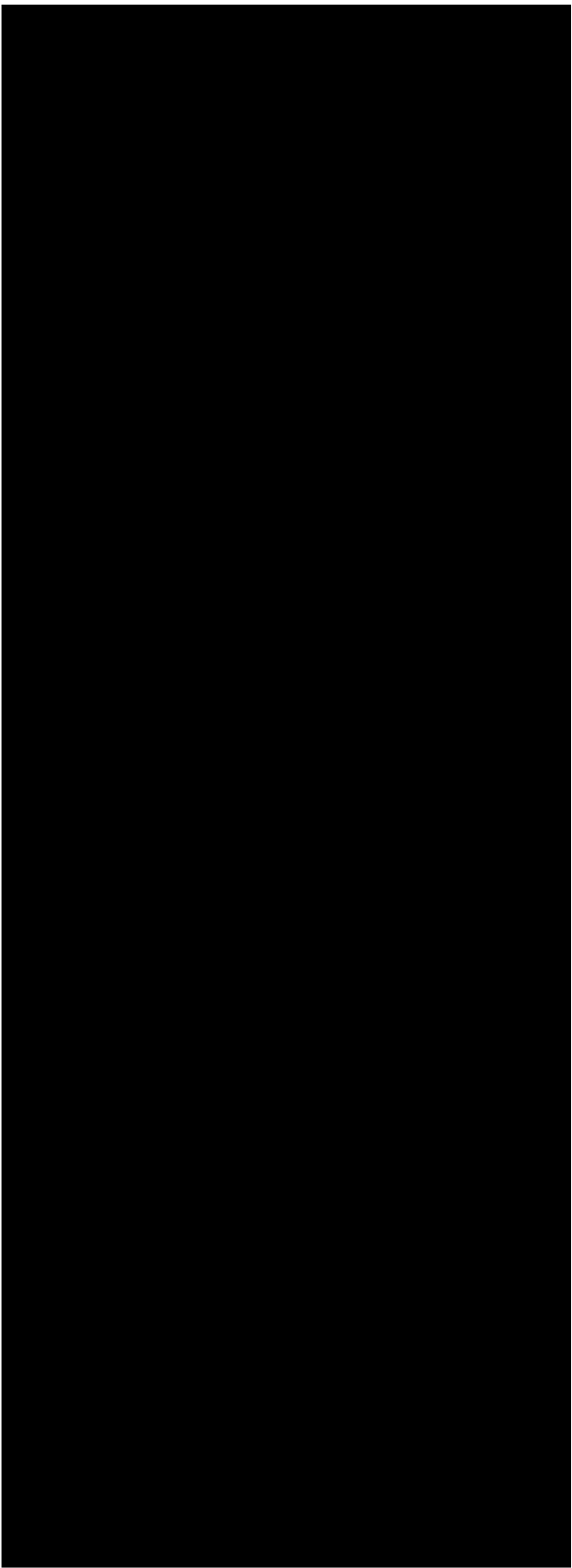
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E X H I B I T S

BITHONEY DEPOSITION EXHIBIT

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1           THE VIDEOGRAPHER: We are now on the record.

2       My name is Robert Martignetti. I'm a videographer  
3       for Golkow Litigation Services.

4           Today's date is November 5, 2020, and  
5       the time is 9:05 a.m.

6           This remote video deposition is being  
7       held In Re Flint Water Cases.

8           The deponent is William Bithoney, M.D.

9           All parties to this deposition are  
10       appearing remotely and have agreed to the witness  
11       being sworn in remotely.

12           Due to the nature of remote reporting,  
13       please pause briefly before speaking to ensure all  
14       parties are heard completely.

15           Counsel will be noted on the  
16       stenographic record.

17           The Court Reporter is Corey Marut and  
18       will now swear in the witness.

19                       (WHEREUPON, the witness was duly  
20                       sworn.)

21                       (Clarification by the reporter  
22                       regarding audio.)

23           MR. STERN: Dave, if I can just put on the  
24       record that per the Court's order from a few weeks



1     ago that the parties to this lawsuit are those and  
2     only those who should be attending this deposition  
3     and that while there may be some standing orders to  
4     order transcripts, either rough drafts, dirty  
5     copies or full copies post deposition, that only  
6     the individuals and the parties that they represent  
7     and who are participating in this deposition should  
8     receive any transcripts, based on confidentiality,  
9     personal protected health information, age of the  
10    Plaintiffs and Judge Levy's prior rulings.

11           MR. ROGERS:  Yeah, Corey -- not Corey Stern.  
12    Corey Marut.  Had you made been aware of that?  
13    That you got to be careful when you prepare the  
14    rough transcript and know who to send it out to.  
15    It should be limited.  Okay.

16           So, it would be the people you see who  
17    are participating in this deposition and I don't  
18    think anyone else, but you square that away with  
19    Corey Stern.  He will make sure you get the right  
20    info.

21

22

23

24

1                   But I don't want to answer definitively  
2     because it's been so long ago and I've traveled so  
3     often and so many places since then.

4           Q.     Whereabouts, what was the physical  
5     location where this meeting took place?

6           A.     It was a school. And what I remember  
7     most about the school was that all the water  
8     fountains were shut off and taped up. But I don't  
9     recall the name of the school. It was a school  
10    auditorium.

11          Q.     And you mentioned that you didn't have  
12    any slides. I assume you're referring to  
13    PowerPoint slides. Did you have --

14          A.     Yes.

15          Q.     Did you have any memoranda or like notes  
16    or some type of written summary of the comments  
17    that you were intending to make and did make at  
18    that meeting?

19          A.     I don't recall making any such notes.  
20    You know, I've worked with children with lead  
21    poisoning for 40 years, so I'm typically relatively  
22    comfortable even standing up in a large audience of  
23    physicians and talking about lead even without  
24    PowerPoints and memoranda, et cetera.

1           But I got social history, where did they  
2     live, where did they live and when did they live,  
3     family history, genetic history, history of  
4     developmental difficulties in the family members,  
5     past medical history, history of hospitalizations,  
6     what's called a review of systems, headaches,  
7     nausea, vomiting, blurred vision, double vision,  
8     cough up blood, trouble hearing, trouble seeing,  
9     asthma, difficult breathing, gastrointestinal  
10    disease, rashes, broken bones, evidence of child  
11    abuse. Just a very extensive history.

12           And in this case, unlike in other cases,  
13    I also looked at how much water the children  
14    ingested and how they ingested it. So, I learned,  
15    for instance, for all these four bellwethers, they  
16    mixed their water, not only -- the kids drank water  
17    not only as plain water but as Kool-Aid or mixed  
18    with Jello or in soups or in cooking, tea,  
19    whatever. And for infants they mixed Enfamil with  
20    iron with tap water.

21           I learned about whether any of them were  
22    boiling water, for example, which concentrated the  
23    lead in the water and increased danger.

24           And at the end I gave them counseling as

1           Q.     Yes, that's okay. That will happen  
2     periodically. It just means that somebody is  
3     shifting to different means of listening in. So,  
4     Don't sorry about it.

5           A.     I see. I didn't want to drop off and  
6     keep talking.

7                     So, starting in 1980 through 1996 I ran  
8     that lead poisoning program. We had 32% of all the  
9     children in the City of Boston in our practice,  
10    very large program.

11                    While I was there, I also started the  
12    program for homeless children. I started a teen  
13    pregnancy program. I started child development  
14    programs. I started high risk infant follow-up  
15    programs, lead poisoning program, a number of  
16    programs for poor children.

17                    And because of that work, several years  
18    later, in 1991, the American Academy of Pediatrics  
19    asked me to write their book "Serving the  
20    Underserved," which was a way of -- the standard  
21    book for training residents to deal with poor  
22    children.

23                    So, I wrote -- well, there were 27  
24    chapters essentially describing what happens with

1 State University of New York.

2 Brookdale is a very large hospital with  
3 I'm going to estimate 100, maybe 200,000 outpatient  
4 visits a year. We had lead poisoning programs  
5 there that I supervised and worked on. And then  
6 in -- so, I was senior vice president for medical  
7 affairs there.

8 And then in 1999 I was appointed  
9 chief -- physician in chief I guess is the title,  
10 physician in chief of St. Joseph's Children's  
11 Hospital in Patterson, New Jersey, which is a  
12 community very similar to Flint.

13 And, by the way, the Brownsville section  
14 of Brooklyn where Brookdale is is also similar in  
15 character to Flint. Bedford, Stuyvesant,  
16 Brownsville.

17 But while at St. Joseph's Children's  
18 Hospital, that was at that time the biggest  
19 children's hospital in New Jersey. So, I was  
20 physician in chief there and continued to see lead  
21 poisoning patients there.

22 In 2003 I was offered the job to run a  
23 five-hospital system in inner city Philadelphia,  
24 and I took that job and continued to see patients

1 additional or repeat blood lead level testing?

2 A. Well, you know, that varies depending on  
3 the locality because different areas have different  
4 prevalence.

5 So, it's -- I mentioned, for instance,  
6 in Boston in the '80s we did testing. We're  
7 mandated to do testing at 6 months, 12 months, 18  
8 months, 24 months, 30 months, 5 years. As the  
9 prevalence of lead went down in that city, we  
10 decreased the need for screening. So, we didn't  
11 bring kids back as much.

12 So, there are local standards based on  
13 the incidence and prevalence.

14 Q. What are the local standards in Michigan  
15 as of 2012 and to the present?

16 A. I'm not aware of published standards or  
17 published requirements.

18 Q. What are your recommended standards as a  
19 pediatrician from 2012 forward?

20 A. Children above 5 need to be -- 5  
21 micrograms per deciliter -- need to be followed  
22 chronically when they see bumps in their lead  
23 levels, but hopefully we'll see them go down.

24 Again, I would like to treat -- if I had

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4 Dr. Specht found.

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14 In the child's entire body -- I'm sorry.

15 I'm being distracted by some changes in my screen.

16

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21 Given a half-life, according to some of

22 the studies that we have seen, a half-life in the

23 bones of two years in a growing child, because

24 remember that line of provisional calcification

1 where the bones are growing when you're 5 years  
2 old. Adults don't have that. The bones aren't  
3 growing. But children's bones are turning over  
4 rapidly.

5  
6  
7  
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10

11 There are studies, for instance, from  
12 Nie, N-i-e, coming out of Boston Children's  
13 Hospital, the program where I used -- that I used  
14 to run, which show that -- well, they looked at 11  
15 children that had lead levels greater than 30  
16 micrograms per deciliter, which everyone agrees is  
17 pretty severe toxic exposure to lead, and they  
18 looked at those kids roughly eight or ten years  
19 later.

20 These kids initially were poisoned as  
21 toddlers and the average age was around 10 when  
22 they were given a tibial bone scan. Those kids had  
23 lead levels on average of 0.7 micrograms per gram  
24 of bone. I don't know. If you multiply that



1 times -- to get to 9.62. It's many-fold lower than  
2 what [REDACTED] has, even though they initially  
3 had blood lead levels greater than 30.

4 So, this implies a very severe level of  
5 intoxication that was chronic and that was masked  
6 by ongoing deposition of lead into the soft tissues  
7 and into the bones.

8 And as I say, it can be masked in  
9 different ways at different times of exposure with  
10 the initial exposures. The lead can disappear in  
11 two days. Later it can disappear in a month.  
12 Later it can disappear in 20 years if you're an  
13 adult. But two years is the half-life for a  
14 5-year-old.

15 So, [REDACTED] for example, and all the  
16 children had very high levels of lead, definitive  
17 levels of lead in their bones, indicating ongoing  
18 exposure, which we missed in our blood lead  
19 measurements, but you can't argue with the fact  
20 that tens of thousands of micrograms of lead are in  
21 this child's bones.

22 Q. Thank you for that explanation, and I do  
23 have some questions about that subject later when  
24 we get to your reports where you talk about the

1 Doctor -- but your suspicion relates to which  
2 issue, the actual composition of the service lines  
3 leading into the houses or the amount of lead that  
4 was found in the water when it was tested?

5 A. I'm suspicious of all the data presented  
6 on the lead in the water, because when the FAST  
7 program looked at what pipes needed to be replaced,  
8 they had to double the number of pipes that they  
9 needed to be -- needed to be replaced.

10 The other thing that I'm concerned about  
11 is that essentially we're looking ex post facto.  
12 These children are essentially canaries in the coal  
13 mine, because if you look at what was presented in  
14 the 60 Minutes study about child development and  
15 kids needing special education last year on  
16 60 Minutes or earlier this year, I don't have the  
17 date in front of me, 80% of the children in Flint  
18 required special education at this point whereas in  
19 the past it was roughly 20%.

20 So, the fact that there was a fourfold  
21 increase in the numbers of kids requiring special  
22 education is quite dramatic.

23 The other thing that concerns me is  
24 there was -- Mona Hanna-Attisha published in the

1 initially mapped.

2 And, as I say, it's the whole water  
3 system that I'm concerned about. And these  
4 children, you know, if they're drinking water at  
5 home, they're drinking water at home that may be  
6 tainted. They go to school. They may be drinking  
7 water in the school that's tainted. They go to  
8 their grandmother's house.

9 But all of a sudden there was a huge  
10 spike in the number of kids who needed  
11 developmental intervention and special education,  
12 400% spike and a 700% increase in those require  
13 having elevated umbilical cord blood.

14 Q. That paper, was that the -- was that  
15 published in 2020, the spring 2020 did you say,  
16 Dr. Attisha's paper?

17 A. I believe so. It's the American Journal  
18 of Perinatology.

19 Q. Is that --

20 A. I don't have the month in front of me,  
21 but I believe it was -- I'm sure it was 2020.

22 Q. Is that part of the -- is that on the  
23 list of the scientific literature that you  
24 provided?

1 Q. I was --

2 A. I have not conducted a physical exam of  
3 these patients.

4 Q. And you haven't performed any  
5 neurological or neuropsychological testing on any  
6 of the Plaintiffs, correct?

7 A. No, I have not.

8 Q. And you have not ordered or you have not  
9 requested that the Plaintiffs undergo any blood  
10 lead testing or any other types of medical testing  
11 as part of your work on the case, correct?

12 A. No.

13 Q. I am correct?

14 A. Yes. I'm sorry. You are correct.

15 Sorry.

16 Q. Okay. Just want to spend a little bit  
17 of time on the -- some basic facts and your  
18 understanding of some basic facts about the case  
19 and some of the important things that relate to  
20 your testimony.

21 What is your understanding as to when  
22 the City of Flint switched from Detroit water as  
23 its water supply to the Flint River?

24 A. April of 2014 is my understanding. I

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19 and some of the important things that relate to  
20 your testimony.

21 What is your understanding as to when  
22 the City of Flint switched from Detroit water as  
23 its water supply to the Flint River?

24 A. April of 2014 is my understanding. I

1 concern about the water testing is that it resulted  
2 in an estimation of 14,000 homes needing to be  
3 replaced when 100 percent more homes needed to have  
4 lines replaced.

5           And then also the canary in the coal  
6 mine argument that there's a 400% increase in the  
7 number of children or the percentage of children  
8 that need special education in Flint subsequent to  
9 the exposure and also the 700% increase in  
10 umbilical cord blood abnormalities in children in  
11 Flint versus Detroit.

12           So, I have evidence of 100 percent error  
13 initially with the number of pipes needed to be  
14 replaced. I have a 700% error in umbilical cord  
15 data. And I have a 400% error in special  
16 education, 400% increase in the need for special  
17 education.

18           This implies to me that there is a  
19 systematic, generalized elevation of lead in the  
20 water that may have been missed by Dr. Edwards, and  
21 he himself mentioned that he didn't get to test the  
22 highest risk areas.

23           So, that's how the case hangs together  
24 for me.

1           The overarching issue is there were  
2   children in Flint. Their lead levels had been  
3   coming down from 2011 into 2014 for sure. All of a  
4   sudden the water was changed. There was a spike in  
5   the lead levels in the water. The percentage of  
6   children with elevated lead levels more than  
7   doubled. And then we had the subsequent outcomes  
8   that I just described.

9           So, that's the north star, if you will.  
10   That's the basis of the thesis. It hangs together  
11   from the beginning, from the incipience of the  
12   water being -- losing its organophosphate treatment  
13   through the children being damaged.

14          Q.    You just mentioned something to the  
15   effect that you believe that there is some  
16   information in some report about the water lead  
17   content of one of the four bellwethers children's  
18   homes. And, so, my question is what is that? What  
19   is the source of that? Because I'm -- I don't  
20   recognize that.

21          A.    Well, in my report -- I'm sorry. I have  
22   four reports here that are 14 pages each.

23                But I did include it in my report  
24   specifically. The mother got a home lead testing

1 kit and she described it turning bright red, that  
2 she was quite fearful about that, and that was the  
3 indication of having lead in the water.

4 She was instructed on how to do the  
5 test, she said, extensively. She knows she did it  
6 right. And lead was found in her tap water.

7 Q. Have you ever seen any reports of the  
8 water lead levels or content in any of the houses  
9 where the bellwether Plaintiffs lived?

10 A. No.

11 Q. When you had that conversation with that  
12 Plaintiff, and it is in one of your reports and  
13 we'll --

14 A. It is.

15 Q. -- get to that in a bit. Did you ask  
16 that parent if they -- if she or he still had a  
17 copy of that report or any information that was  
18 generated from that sample that was tested?

19 A. I don't recall if I asked her for a  
20 report. But, you know, as I understood it in our  
21 discussion, it was a qualitative test. So, the  
22 only thing she needed to understand was that it was  
23 red and red was bad.

24 So, there was not -- it didn't say, as



1 far as I understood from our discussion because I  
2 asked her if it was quantitative -- I asked her if  
3 it showed numbers. Please excuse me. I didn't ask  
4 her if it was quantitative. And she said no. She  
5 just knew it was red.

6 Q. Have you read -- I don't think you have,  
7 but just to confirm.

8 You did not read Dr. Marc Edwards'  
9 depositions that he provided in the case, is that  
10 right?

11 A. No.

12 Q. So I'm right that you did not?

13 A. Please excuse me for my answering  
14 incorrectly to your question.

15 I did not read them.

16 Q. I'll try to ask the question differently  
17 so we don't fall into that, but just we need to  
18 keep the record clear. That's all.

19 A. I'll endeavor to do that. I understand  
20 the issue.

21 Q. Yeah, as do I.

22 The -- Dr. Edwards has written some  
23 papers recently, two in particular, about Flint  
24 concerning his work evaluating biosolids.

1 we're discussing is that the children have  
2 thousands of micrograms of lead in their bodies,  
3 and it's my best guess as a clinician -- and it's  
4 not a guess. It's a judgment. Please excuse me.

5           It's my judgment as a fairly highly  
6 experienced clinician, I've probably seen more  
7 cases than most doctors you'll ever encounter, that  
8 that is due to the ingestion of water from the  
9 Flint River and that's all associated with the  
10 developmental delays and increased umbilical cord  
11 levels that we're seeing across the board. And  
12 we've discussed this extensively.

13           Q.     That reference that you just gave me  
14 from a publication that came out in August 2020,  
15 was that on the list of reference materials that  
16 you provided? Because I don't think it was.

17           A.     No, it wasn't. I looked at it  
18 yesterday.

19           Q.     All right. Tell -- do you -- you  
20 mentioned it's a massive tome. Is it a -- in what  
21 form do you have it?

22           A.     Well, I haven't printed it out. I can  
23 send, if -- Corey, if you wouldn't mind making a  
24 note. I can send you the link.

1 we're discussing is that the children have  
2 thousands of micrograms of lead in their bodies,  
3 and it's my best guess as a clinician -- and it's  
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22           A.     Well, I haven't printed it out. I can  
23 send, if -- Corey, if you wouldn't mind making a  
24 note. I can send you the link.

1                   But that is dramatic evidence that  
2   children who had lead levels greater than 30 had  
3   lower levels in their bones than this child did and  
4   that any of these -- and that lower than any of  
5   these four bellwethers had.

6                   That is the basis of my belief that lead  
7   is the cause of the developmental disabilities that  
8   Dr. Krishnan found or in some cases that the  
9   schools mention or the need for special education,  
10   et cetera.

11                  That is my motive for deciding that this  
12   was causative, that lead poisoning was causative.

13                  The levels of lead in the blood given  
14   the nine-day half-life, et cetera, are meaningless  
15   to me. The levels of lead in the water or that  
16   measured -- measured by Hanna Attisha's paper are  
17   meaningless to me.

18                  There was a big spike in the lead in the  
19   water. It's clearly systemic. It's across the  
20   City of Flint. And it resulted in a billion dollar  
21   program to replace the pipes because there was so  
22   much lead in the water.

23                  We've mentioned the umbilical cord blood  
24   lead levels. We've mentioned the need for special

1 education. We were seeing 400%, 700% increases in  
2 issues.

3 So, this is -- I'm certain that these  
4 kids had elevated lead levels, and the fact that  
5 they're not measured in the blood I explained by  
6 the toxicologic profile that we discussed, I think  
7 repeatedly by now. I don't want to belabor the  
8 point.

9 Q. Well, I do have a question about that.

10 If the children had such high levels of  
11 lead in their bones during the period of time  
12 April of 2014 through October 2015 as you've  
13 described based on the bone lead results and then  
14 the extrapolation backwards given half-life and so  
15 forth, why wouldn't there have been elevated blood  
16 lead levels in all of the tests that we just looked  
17 at, because all of those were reported as less than  
18 3.3?

19 A. Well, as I mentioned, the half-life of  
20 lead in the bones -- I'm sorry -- in the blood is  
21 very short. Relatively naive patients can ingest  
22 small amounts of lead and have it go into the bones  
23 and the soft tissue fairly rapidly so that it's not  
24 measurable.

1 can tell you is these kids are replete with serious  
2 amounts of lead, and I have no source of it.

3 I did ask parents about other sources  
4 and they had no other mention of sources, like  
5 peeling paint or leaded dust or whatever.

6 Q. Are you familiar with the EPA modeling  
7 program that takes into account lead in dust, lead  
8 in soil, lead in water, lead in paint and so forth  
9 for evaluating blood lead levels?

10 A. I'm aware that the EPA says that it's  
11 about 20% of lead, lead levels in children are due  
12 to lead in the water. That's all I could say about  
13 it right now without looking at it.

14 Q. So, you -- when you say that you --  
15 there is no information about other potential  
16 sources of lead for the bellwether Plaintiffs, the  
17 fact is that you don't know what any results are  
18 for tests of lead in the paint or the dust or the  
19 soil of these residences, do you?

20 A. I do not know because they weren't  
21 tested. However, I'm aware of systematic  
22 penetration of lead into the city -- water of the  
23 City of Flint that's resulted in major damage to  
24 children, which we've described extensively before,

1 as evidenced with the need for special education of  
2 80% of the children in Flint.

3 And there's not any other community in  
4 the United States that I am aware of where there is  
5 an immediate and sudden increase in the need for  
6 special education.

7 We have no other reason, no other cause  
8 of this other than lead in the water.

9 Q. With respect to the issue of the  
10 extrapolation backwards from the bone lead  
11 measurements that are reported now, again, I just  
12 want to make sure I understand what you're saying  
13 about any scientific literature in support of that  
14 theory or opinion that you've expressed.

15 Is there any chapter from a textbook or  
16 a scientific article or paper that you can point me  
17 to in the scientific community that you're a member  
18 of which supports what you've said, that, namely,  
19 if you have a blood -- a bone lead measurement in  
20 2019 or 2020, that you can go back in time and  
21 estimate the amount of lead that would be in  
22 children's bones four or five or six years before?

23 A. Well, I'm familiar with the  
24 International Committee on Radiation Protections

1 for when they stopped drinking the water, but if  
2 they stopped drinking the water during 2014, that  
3 would mean the maximum period of time that they  
4 were exposed to lead from drinking the water would  
5 be basically from May through December, if it was  
6 that point in time, 2014, right?

7 A. I have -- I believe so. I believe  
8 that's what we've gone through.

9 Q. Is it your view that whatever -- that  
10 there were -- if they did have lead in their bones,  
11 that there was no source of lead to get into their  
12 bones except the water during that period of time?

13 A. Well, that's a hypothetical, which I  
14 have no reason to suspect that there was another  
15 source. When I interviewed the parents, they did  
16 not describe environmental issues such as peeling  
17 paint, et cetera, to me or I would have noted it.  
18 None of them did.

19 Q. And yet for those bellwether Plaintiffs,  
20 there is -- and even after, there were no blood  
21 lead level tests that ever reported levels higher  
22 than 3.3, right?

23 A. I believe that's correct, but the bone  
24 lead levels are seriously elevated and indicate



1 So, they can read, but they can't read to learn.

2 So, there are a number of subtle  
3 educational deficits that we get into with lead and  
4 it's not all IQ.

5 So, for instance, this child's IQ is 99  
6 and yet he would have difficulty, in my opinion,  
7 based on these reading and math deficits, executive  
8 function deficits, issues with focus and attention,  
9 as he ages out and gets to higher and higher levels  
10 of education.

11 There may be more in here, but I have  
12 documented it all.

13 Q. So, what did you do to rule out other  
14 possible causes for those conditions besides lead  
15 exposure from the water?

16 A. Well, we got family history. For  
17 instance, that's why Malachi, I mentioned that he  
18 also requires intercession.

19 That was -- these reports, by the way,  
20 are highly abbreviated based on thousands of pages  
21 literally. I'm sure if you go to the -- go to your  
22 files, you will see there are thousands of pages.

23 But part of the family history involved  
24 looking at his parents, looking at his siblings for

1 educational issues, looking at grandparents,  
2 et cetera.

3 The only positive family history I found  
4 was [REDACTED] having a problem, and he was also in an  
5 intercession but he also drank the water.

6 I asked all the parents about other  
7 sources of lead intoxication, and I'm sorry that I  
8 didn't put it in my report, but that's standardized  
9 approach for anybody who is looking at children for  
10 lead intoxication. And I found no other sources.

11 Q. Yeah, but, Doctor, maybe you  
12 misunderstood my question or I didn't phrase it  
13 right.

14 What did you do to rule out other causes  
15 for these conditions besides lead exposure?

16 A. Well, as I said, family history,  
17 educational history of the parents, et cetera.  
18 But -- and, of course, Dr. Krishnan found findings  
19 that were consonant with lead intoxication.

20 Q. Yeah, but Dr. Krishnan testified that  
21 with respect to the children's findings or the  
22 findings for the children based on her testing,  
23 that she had no baseline level or no testing to  
24 compare them to, so that there was no evidence of a

1 Q. And, similarly, with respect to all of  
2 the Plaintiffs, you -- in your opinion, exposure to  
3 paint, dust or -- sorry -- lead in paint, dust or  
4 soil did not contribute to their conditions,  
5 causing their conditions, right?

6 A. I have no evidence of that. That was  
7 the answer.

8 When you say all of the Plaintiffs,  
9 you're meaning just four bellwethers.

10 Q. Exactly, yeah. The four that we're  
11 talking about here, yeah.

12 A. That's what I'm answering, just about  
13 the four, right.

14 Q. And that's what I'm trying to make sure  
15 we got on the record here.

16 Same question for all of the four  
17 bellwethers. The period of time over which they  
18 were exposed to lead from the water from having  
19 been drinking the water would be the period of time  
20 based on, you know, whatever period of time it is  
21 that they said they were drinking the water, from  
22 April 2014 through the period of time that they  
23 stopped, right?

24 A. Yes.

1           A.       I did not make such estimates.

2           Q.       Okay. Now, please, you wanted to  
3 explain something or add something. Go ahead.

4           A.       My point is that these children went to  
5 school. The school's water was known to be  
6 contaminated. I don't know which schools they  
7 attended. They went to grandma's house or their  
8 aunt's house. You know, they were all over Flint.  
9 So, their exposure to water is not simply to the  
10 water in their home.

11          Q.       Well, did you ask the parents that  
12 question, namely, did you tell your child as of the  
13 point in time at which you decided that the family  
14 should not be drinking the Flint River water that  
15 they should stop drinking the water in schools, at  
16 grandma's house or anywhere else they went?

17          MR. STERN: Object to form.

18          THE WITNESS: May I answer?

19          MR. STERN: Yes.

20          BY THE WITNESS:

21          A.       I did not tell them that. I'm just  
22 bearing in mind when I went to Flint in 2015 or  
23 whenever it was how all the school water fountains  
24 were closed because they were found to be positive

1           MR. ROGERS: Well, I'd like an answer to that  
2 question first but...

3           MR. STERN: I'm going to instruct him not to  
4 answer until we talk because this is a different  
5 project that he did for Flint, and I can explain it  
6 off the record.

7           MR. ROGERS: All right. Go ahead.

8                     So, you're instructing him not to answer  
9 at this time, and let's go off the record and we'll  
10 determine what to do. Okay.

11           THE VIDEOGRAPHER: The time is 3:05 p.m., and  
12 we're off the record.

13                     (WHEREUPON, discussion was had off  
14 the record.)

15           THE VIDEOGRAPHER: The time is 3:07 p.m., and  
16 we're on the record.

17 BY MR. ROGERS:

18           Q.       So, Doctor, I'll just change the  
19 question up a little bit. Mr. Stern had provided a  
20 description of what this work was related to.

21                     I just simply want to know if the  
22 literature that you reviewed during this time as  
23 described by this time entry here, at some point  
24 before April 2020, that relates to various

1           MR. ROGERS: Well, I'd like an answer to that  
2 question first but...

3           MR. STERN: I'm going to instruct him not to  
4 answer until we talk because this is a different  
5 project that he did for Flint, and I can explain it  
6 off the record.

7           MR. ROGERS: All right. Go ahead.

8                     So, you're instructing him not to answer  
9 at this time, and let's go off the record and we'll  
10 determine what to do. Okay.

11           THE VIDEOGRAPHER: The time is 3:05 p.m., and  
12 we're off the record.

13                     (WHEREUPON, discussion was had off  
14 the record.)

15           THE VIDEOGRAPHER: The time is 3:07 p.m., and  
16 we're on the record.

17 BY MR. ROGERS:

18           Q.       So, Doctor, I'll just change the  
19 question up a little bit. Mr. Stern had provided a  
20 description of what this work was related to.

21                     I just simply want to know if the  
22 literature that you reviewed during this time as  
23 described by this time entry here, at some point  
24 before April 2020, that relates to various

1 28 case reports, if you will.

2 Q. So, you had done reports based upon  
3 neuropsychological testing done by Dr. Hoffman?

4 MR. STERN: Object to form and foundation.

5 BY THE WITNESS:

6 A. Yes. And since he wasn't the expert  
7 that was being used in the case, I had to do  
8 everything again. So, it doubled the amount of  
9 time.

10 And so what I did was I divided the  
11 number of hours I spent by the number of cases that  
12 I did and came up with the amounts.

13 MR. STERN: Objection. I also want to note  
14 that Dr. Hoffman never performed any  
15 neuropsychological examinations.

16 The reason why we had to switch experts,  
17 as I've stated on the record, is because  
18 Dr. Hoffman was unable due to COVID to travel to  
19 Michigan to do the evaluations in person and I was  
20 not comfortable with him doing them any other way.

21 BY MR. ROGERS:

22 Q. Well, let's just try to get through this  
23 exhibit here in terms of what it means in time and  
24 actual work that you did.

1                   You have an entry here of 4 hours for  
2    "Initial record review," and you have here at the  
3    first sentence, "Please be advised that all  
4    billable hours have been divided equally among the  
5    14 clients."

6                   So, does that mean that the total amount  
7    of time that you spent reviewing records for all 14  
8    bellwethers was 4 hours?

9           A.     No, they're divided. They were  
10   actually -- I had to do 14 cases and then because  
11   Dr. Hoffman wasn't -- wasn't involved, I had to do  
12   14 case -- the same 14 cases again.

13          Q.     But wait a second.

14                  You described at length and mentioned  
15   several times, Doctor, that you received thousands  
16   of pages of information and medical records and  
17   things that you reviewed. I understood you to mean  
18   for the four bellwether Plaintiffs that we have  
19   now. And here you have an invoice where you say  
20   that you spent 4 hours doing initial record review  
21   on 14 clients, 14 bellwethers.

22                  Is that right? Is the total amount of  
23   time that you spent reviewing records on the 14  
24   bellwethers 4 hours?



1           A.     That's the population-based study --

2           Q.     Okay.  You keep --

3           A.     -- that we were assessing.

4           Q.     Yeah, you say -- the fact that you said  
5     that leads me to want to make sure I ask the  
6     question.  And, that is, are there other sources of  
7     information that you relied on besides  
8     population-based studies?

9           A.     Well, all the information that I relied  
10    upon we've discussed as far as I know.

11                   The population-based study in Toronto  
12    showed that the average child in Toronto had a lead  
13    level of 0.5 micrograms per gram of bone.  We've  
14    been over that, but that's all I'm saying.

15          Q.     Okay.  I'll highlight this next  
16    paragraph to focus us on it, if I can.

17                   "Levels of greater than 10 micrograms  
18    per gram of bone mineral indicate persistent  
19    ongoing exposure."

20                   Where did you derive that language from?

21          A.     Discussions and reading Dr. -- maybe not  
22    discussions.  Reading Dr. Specht's report.  Not  
23    discussions.  Reports mention that.

24          Q.     Right.  And then "Bone lead levels

1 greater than 20 micrograms per gram of bone mineral  
2 indicate intense exposure."

3 Where did that come from, same source?

4 A. Yes, Dr. Specht's reports contain that  
5 verbiage.

6 Q. Did you note that when you read the  
7 rough draft of his deposition transcript that he  
8 withdrew those references and said that they were  
9 incorrectly included in his bone scan reports?

10 A. I saw that. I'm not an expert in his  
11 work. So, I believed his work when he sent me  
12 those reports and I used his reports, and I did see  
13 that he withdrew that when I read his -- when I  
14 read his deposition over the last couple of days.  
15 I don't know exactly when I read it.

16 Q. Right. So, you also withdraw these two  
17 statements, then, since it's based on what he said  
18 and not any independent evaluation of your own,  
19 right?

20 A. Yes. If Dr. Specht has withdrawn that,  
21 I withdraw it because I relied upon him.

22 Q. And you talk about [REDACTED]  
23 micrograms per gram of bone mineral is consistent  
24 with a history of past chronic exposure to blood

1 greater than 20 micrograms per gram of bone mineral  
2 indicate intense exposure."

3 Where did that come from, same source?

4 A. Yes, Dr. Specht's reports contain that  
5 verbiage.

6 Q. Did you note that when you read the  
7 rough draft of his deposition transcript that he  
8 withdrew those references and said that they were  
9 incorrectly included in his bone scan reports?

10 A. I saw that. I'm not an expert in his  
11 work. So, I believed his work when he sent me  
12 those reports and I used his reports, and I did see  
13 that he withdrew that when I read his -- when I  
14 read his deposition over the last couple of days.  
15 I don't know exactly when I read it.

16 Q. Right. So, you also withdraw these two  
17 statements, then, since it's based on what he said  
18 and not any independent evaluation of your own,  
19 right?

20 A. Yes. If Dr. Specht has withdrawn that,  
21 I withdraw it because I relied upon him.

22

23

24

1           Q.     Yeah, why don't we -- let's -- why don't  
2     you answer this question, and we can take a break  
3     and then we'll continue on to 5:00 if that's okay  
4     with you. I'm getting a little fatigued myself.

5                     So, why don't you go ahead and answer  
6     that question, and we'll take a break.

7           A.     Well, first floor apartments have more  
8     access to leaded soil, for instance, when the wind  
9     blows. So, that's one issue.

10                    If children are playing in a yard that  
11     doesn't have grass, that results in exposure. Like  
12     if you have bare surfaces, that results in  
13     increased exposure.

14                    Lack of parental cleanliness when the  
15     dust and -- dust and soil get into the house can be  
16     a problem. The way the parents clean the house,  
17     not using the appropriate detergents, et cetera.

18                    But it's more just the ways you could  
19     imagine that dust would physically get into a home.  
20     It has a nasty way of getting in, as you well know.

21           MR. ROGERS: Okay. So, it's -- before we go  
22     off the record, it's 4:00. I wouldn't mind  
23     continuing and we'll go to 5:00. We are definitely  
24     not going to finish.

1                   If your preference, Doctor, is to stop,  
2    I'm happy to do that.  I do have a hard stop at  
3    5:00.  Whatever you'd like to do.

4 I can pretty much guarantee you that the  
5 next round, at least from my perspective, you know,  
6 I can finish way -- you know, definitely before  
7 lunchtime. But I leave it up to you since we have  
8 to do another day.

9                   What's your preference? I don't care.

10 MR. STERN: Can I talk to Dr. Bithoney during  
11 the break and then let you know?

12 MR. ROGERS: Yeah, that's fine, sure. That's  
13 fine.

14           THE VIDEOGRAPHER: The time is 4:00 p.m., and  
15   we're off the record.

16 (WHEREUPON, discussion was had off  
17 the record and a recess was had  
18 from 4:00 to 4:05 p.m.)

19 (WHEREUPON, at 4:05 p.m. the  
20 videotaped remote deposition of  
21 WILLIAM G. BITHONEY, M.D. was  
22 adjourned, to be reconvened at  
23 9:00 a.m., on November 17, 2020.)

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I, CORINNE T. MARUT, C.S.R. No. 84-1968,  
Registered Professional Reporter and Certified  
Shorthand Reporter, do hereby certify:

That previous to the commencement of the  
examination of the witness, the witness was duly  
sworn to testify the whole truth concerning the  
matters herein;

That the foregoing deposition transcript  
was reported stenographically by me, was thereafter  
reduced to typewriting under my personal direction  
and constitutes a true record of the testimony  
given and the proceedings had;

That the said deposition was taken  
before me at the time and place specified;

That the reading and signing by the  
witness of the deposition transcript was agreed  
upon as stated herein;

That I am not a relative or employee or  
attorney or counsel, nor a relative or employee of  
such attorney or counsel for any of the parties  
hereto, nor interested directly or indirectly in  
the outcome of this action.



CORINNE T. MARUT, Certified Reporter

(The foregoing certification of this  
transcript does not apply to any  
reproduction of the same by any means, unless under  
the direct control and/or supervision of the  
certifying reporter.)

1 INSTRUCTIONS TO WITNESS

2

3 Please read your deposition over  
4 carefully and make any necessary corrections. You  
5 should state the reason in the appropriate space on  
6 the errata sheet for any corrections that are made.

7 After doing so, please sign the errata  
8 sheet and date it.

9 You are signing same subject to the  
10 changes you have noted on the errata sheet, which  
11 will be attached to your deposition.

12 It is imperative that you return the  
13 original errata sheet to the deposing attorney  
14 within thirty (30) days of receipt of the  
15 deposition transcript by you. If you fail to do  
16 so, the deposition transcript may be deemed to be  
17 accurate and may be used in court.

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UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

----- )  
 ) Civil Action No.  
 ) 5:16-cv-10444-  
In re: Flint Water Cases ) JEL-MKM  
 ) (consolidated)  
 )  
----- ) Hon. Judith E. Levy  
 ) Mag. Mona K. Majzoub  
Elnora Carthan, et al. v. )  
Governor Rick Snyder, et al. ) Civil Action No.  
 ) 5:16-cv-10444-JEL-  
----- ) MKM

AFFIDAVIT

I, WILLIAM BITHONEY, M.D., the  
undersigned affiant, being first duly sworn, on  
oath say that the testimony given at my deposition  
at the time and place aforesaid is the truth, the  
whole truth, and nothing but the truth, and that I  
have read the foregoing transcript consisting of  
Pages 1 to 286 inclusive, and do subscribe and make  
oath that the same is a true, correct, and complete  
transcript of my deposition so given as aforesaid,  
and includes changes, if any, so made by me.

FURTHER AFFIANT SAITH NAUGHT.

\_\_\_\_\_  
AFFIANT, WILLIAM BITHONEY, M.D.

SUBSCRIBED AND SWORN TO before me  
this       day of       , A.D. 20 .

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Notary Public



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UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

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Elnora Carthan, et al. v. )  
Governor Rick Snyder, et al. ) Civil Action No.  
 ) 5:16-cv-10444-JEL-  
----- ) MKM

HIGHLY CONFIDENTIAL  
RESUMPTION OF THE  
REMOTE VIDEOTAPED DEPOSITION OF  
WILLIAM BITHONEY, M.D.  
November 17, 2020  
VOLUME II

Resumption of the remote videotaped  
deposition of WILLIAM BITHONEY, M.D., conducted at  
the location of the witness in Fayetteville,  
Georgia, commencing at 9:04 a.m., on the above  
date, before CORINNE T. MARUT, C.S.R. No. 84-1968,  
Registered Professional Reporter, Certified  
Realtime Reporter and Notary Public.

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19 REPORTED BY: CORINNE T. MARUT, C.S.R. No. 84-1968

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1 I N D E X

2 WILLIAM BITHONEY, M.D. (Day 2) EXAMINATION

3 BY MR. ROGERS..... 304

BY MR. ERICKSON..... 452

4 BY MR. ROGERS..... 457

5

6

7 E X H I B I T S

8 BITHONEY (DAY 2) DEPOSITION EX. MARKED FOR ID

9 A Document, "Articles Relied 305

Upon - See articles cited in  
10 my report"

11 No. 1 NTP Monograph, "Health Effects 316  
of Low-Level Lead"

12

No. 2 Article, "Elevated Blood Lead 317  
13 Levels in Children Associated  
With the Flint Drinking Water  
14 Crisis: A Spatial Analysis of  
Risk and Public Health Response"

15

No. 3 Paper, "In Flint, Schools 319  
16 Overwhelmed by Special Ed.  
Needs in Aftermath of Lead  
17 Crisis"

18 No. 4 Document entitled "Early 322  
results from 174 children  
19 exposed to lead during the  
water crisis shows 80% of them  
20 will require special education  
services"

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## E X H I B I T S

BITHONEY (DAY 2) DEPOSITION EX. MARKED FOR ID

No. 5 Document from ATSDR, June 12, 323

2019, "Case Studies in  
Environmental Medicine, Lead  
Toxicity"

No. 6 Document, January 4, 2012, 325

"Low Level Lead Exposure Harms  
Children: A Renewed Call for  
Primary Prevention, A Report  
of the Advisory Committee on  
Childhood Lead Poisoning  
Prevention of the Centers for  
Disease Control"

No. 7 Document, "Dangers of a blood 327

lead level above 2 and below  
10 micrograms per deciliter to  
both adults and children"

No. 8 Book chapter referred to in

Exhibit A -

\*\*\*Not attached or marked as  
an exhibit\*\*\*

No. 9 Article, "Low Level 329

Environmental Lead Exposure  
and Children's Intellectual  
Function: An International  
Pooled Analysis"

No. 10 Document, "Preventing Lead 332

Poisoning in Young Children, A  
Statement by the Centers for  
Disease Control and

Prevention," from August 2005

No. 11 Paper by Canfield, et al., 333

"Intellectual Impairment in  
Children with Blood Lead  
Concentrations Below 10  
Micrograms Per Deciliter"

## E X H I B I T S

1			
2	BITHONEY (DAY 2) DEPOSITION EX.	MARKED FOR ID	
3	No. 12	American Academy of	335
4		Pediatrics, Policy Statement,	
5		"Lead Exposure in Children:	
6	No. 13	Prevention, Detection, and	
7		Management"	
8			
9	No. 14	Article from the American	335
10		Academy of Pediatrics,	
11		"Prevention of Childhood Lead	
12		Toxicity"	
13			
14	No. 15	Article from Pediatric Annals,	336
15		"Low Level Lead Exposure and	
16		Cognitive Function in Children"	
17	No. 16	Book chapter referred to in	
18		Exhibit A -	
19		***Not attached or marked as	
20		an exhibit***	
21	No. 17	Book chapter referred to in	
22		Exhibit A -	
23		***Not attached or marked as	
24		an exhibit***	
	No. 18	Report on the Environment, EPA	345
		government report, "Blood Lead"	
	No. 19	Article, "Blood Lead Levels in	345
		Children Aged 1 through 5 in	
		the United States, 1999	
		through 2010"	
	No. 20	Document entitled "Lead	349
		exposure in children: a guide	
		to U.S. standards"	
	No. 21	Mlive.com report referred to	
		in Exhibit A -	
		***Not attached or marked as	
		an exhibit***	

## E X H I B I T S

BITHONEY (DAY 2) DEPOSITION EX. MARKED FOR ID

No. 21 Article entitled "Use of a 352

Cumulative Exposure Index to

Estimate the Impact of Tap

Water Lead Concentration on

Blood Lead Levels in 1- to

5-Year-Old Children (Montreal,  
Canada)"

No. 22 Document from the Centers for 354

Disease Control, "Lead in

Drinking Water and Human Blood

Lead Levels in the United States."

No. 23 Document from the Centers for 355

Disease Control, "Lead in

Drinking Water and Human Blood

Lead Levels in the

United States" -

\*\*\*Duplicate of Exhibit 22\*\*\*

No. 24 Article in New England Journal 355

of Medicine, "Lead

Contamination in Flint-An

Abject Failure to Protect

Public Health"

No. 25 Duplicate of Exhibit 2 -

\*\*\*Not marked or attached as a

separate Exhibit 25\*\*\*

No. 26 Document, "Report on the 356

Environment" from the EPA,

"Blood Lead" -

\*\*\*Duplicate of Exhibit 17\*\*\*

No. 27 Paper entitled "The decrease 357

in population bone lead levels

in Canada between 1993 and

2010 as assessed by in vivo

XRF," by McNeill

## E X H I B I T S

BITHONEY (DAY 2) DEPOSITION EX. MARKED FOR ID

No. 28 Paper by Nie, et al., "Blood 359  
lead levels and cumulative  
blood lead index (CBLI) as  
predictors of late  
neurodevelopment in  
lead-poisoned children"

No. 29 Article by O'Flaherty, 362  
"Physiologically based models  
for bone-seeking elements V.  
Lead absorption and  
disposition in childhood"

No. 30 Annals of the ICRP from 366  
November 2, 1995, "Basic  
Anatomical and Physiological  
Data for Use in Radiological  
Protection: The Skeleton"

No. 31 Paper by Specht, et al., "XRF 376  
measured bone lead as a  
biomarker for lead exposure  
and toxicity among children  
diagnosed with lead poisoning"

No. 31-A Article by Specht, et al., 391  
"Childhood lead biokinetics  
and associations with age  
among a group of lead poisoned  
children in China"

No. 32 Paper by Bruccoleri and Woolf, 377  
"Puberty and resultant  
increased bone turnover as a  
possible etiology of an  
increased lead concentration  
in a pre-adolescent girl"



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## E X H I B I T S

BITHONEY (DAY 2) DEPOSITION EX. MARKED FOR ID

No. 33	Paper by O'Flaherty, et al.,	378
	"Dependence of apparent blood	
	lead half-life on the length	
	of previous lead exposure in	
	humans"	
No. 34	Paper by Hauptman, Bruccoleri	383
	and Woolf, "An Update on	
	Childhood Lead Poisoning"	
No. 35	Geo-mapping report	405
No. 36	Paper by Hanna-Attisha, et	426
	al., "Umbilical Cord Blood	
	Lead Level Disparities Between	
	Flint and Detroit"	
No. 37	e-mail from Corey Stern to	445
	David Rogers and Patrick	
	Lanciotti including ATSDR link	
	to references	

1 THE VIDEOGRAPHER: We are now on the record.

2 My name is Jeff Sindiong. I am a  
3 videographer for Golkow Litigation Services.

4 Today's date is November 17, 2020, and  
5 the time on the screen is 9:04.

6 This is the continuation of the  
7 deposition of Dr. William Bithoney, who I remind is  
8 still under oath.

9 This is for the Flint Water Cases.

10 All parties to this deposition are  
11 appearing remotely.

12 Counsel will be noted on stenographic  
13 record.

14 Our Court Reporter is Corinne Marut.

15 And you may now continue.

16 MR. ROGERS: Thanks, Jeff.

17 WILLIAM BITHONEY, M.D.,  
18 called as a witness herein, having been previously  
19 duly sworn and having testified, was examined and  
20 testified further as follows:

21 EXAMINATION (Resumed)

22 BY MR. ROGERS:

23 Q. Good morning, Dr. Bithoney. We talked  
24 for a little bit off the record; and as I said, I

1 am optimistic that we'll finish by lunch today,  
2 around 1:00.

3 I wanted to start by marking as an  
4 exhibit, and just because of the sequencing I'm  
5 going to mark this, Corey Marut, as Exhibit A, the  
6 list of references that you had provided to us  
7 before your last deposition.

8 So, you had mentioned that you don't  
9 have that, when we were off the record, you don't  
10 have it with you. So, I'll go ahead and show it to  
11 you, and we'll just identify it first and start  
12 with that.

13 So, my screen should be shared with you  
14 now, Doctor.

15 MR. ROGERS: This will be, Corey, Exhibit A.

16 (WHEREUPON, Bithoney Deposition  
17 Exhibit A was marked for  
18 identification: Document,  
19 "Articles Relied Upon - See  
20 articles cited in my report.")

21 BY MR. ROGERS:

22 Q. Can you see this?

23 A. I can.

24 Q. Okay. You can see what I did here is I

1 being placed into the bones, what happens is that  
2 calcium -- I'm sorry -- when calcium is being  
3 placed into the bones to help the child grow, it  
4 pushes lead out of the bones and that results in a  
5 decreased half-life of lead in the bones of  
6 children who are growing, while with adults who  
7 aren't growing they're not having calcium going  
8 into their bones and pushing lead out.

9           So, the half-life in adults is  
10 significantly longer than the half-life in children  
11 of lead in the bones.

12           Q.    Is there any other scientific paper or  
13 literature that you rely upon for that opinion that  
14 you hold about the half-life of lead in the bones  
15 of children besides this paper here?

16           A.    Well, we talked about this the last  
17 time. Hold on, please.

18           Q.    Well, you did mention, yeah, that the  
19 last time and earlier in the deposition today you  
20 said. "Would you like me -- I have that here,  
21 would you like me to show it to you," I think.  
22 Would you go ahead and do that.

23           A.    I will.

24           Q.    Thank you. I'm interested in any other

1 to review it with you now, the information is that

2

3

4 Do you recall that?

5 A. Can you tell me what page of my report

6 you're reading from?

7 Q. 5.

8 A. 6.72 micrograms per gram of bone, yes, I

9 see it.

10 Q. So what --

11 MR. ERICKSON: Let the record reflect that

12 that report is Exhibit 5.

13 MR. ROGERS: Thanks, Phil.

14 BY MR. ROGERS:

15 Q. And, so, what -- using your two-year

16 half-life of blood -- I'm sorry -- bone lead, if

17 you were to use that number and extrapolate

18 backwards in time, you would basically multiply

19 6.72 times 4 if you were trying to get the estimate

20 for how much it would have been four years prior to

21 that in order to do that. Am I right?

22 A. That's correct.

23 Q. And if you were trying to figure out how

24 much bone would be -- sorry -- how much lead would

1 be in the bone two years prior to that, you'd

2 multiply the 6.72 times 2 essentially, right?

3 A. Yes.

4 Q. Okay. So, then four years -- if you

5 multiply 6.72 times 4, you get 26.9. And you had

6 done a calculation like that sort of in your head

7 the last time we were together when I was asking

8 you questions to for -- in support of your

9 statement that as of four years before August 2019,

10 Emir Sherrod's bone lead would have been

11 approximately 26.9 or 27 micrograms per gram in his

12 bone, right?

13 A. Based on the half-life, yes.

14 Q. Is that -- that is still your opinion

15 today as well, right?

16 A. It is.

17 Q. Now, I also asked you some questions

18 about your opinions as to why, if that is true,

19 that Emir Sherrod would have had -- let's call it

20 27 because it's 26.9 -- approximately 27 micrograms

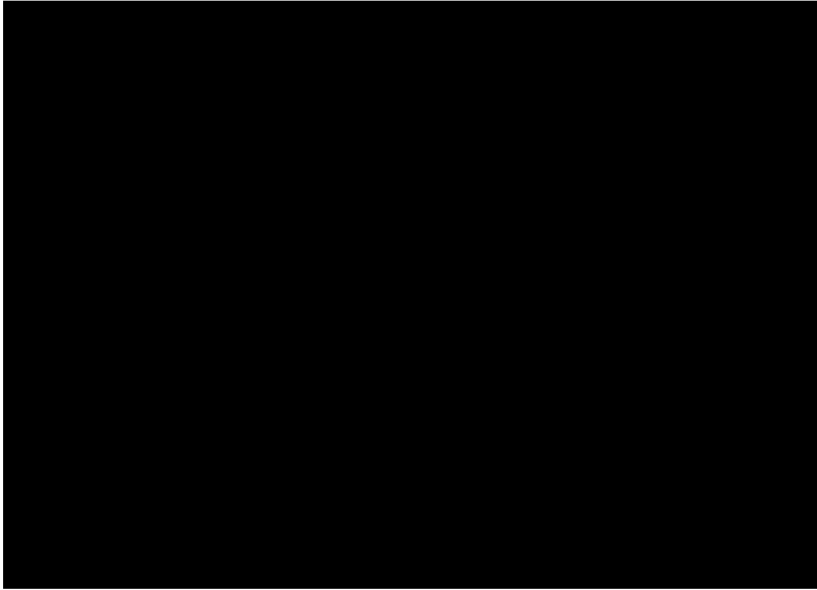
21 per gram of lead in his -- in his bone, in this

22 case his tibia bone, why he also would not have had

23 elevated blood lead levels at approximately the

24 same time?

1           A.     The fact remains that the lead is in his  
2     bones.   That's the fact.

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11           MR. STERN:   Object to form and foundation.

12     BY THE WITNESS:

13           A.     The lead is in the child's bones.   I  
14     have no reason to suspect there's any other cause  
15     of this.   I have no proof that there's another  
16     cause for this.

17                    So, knowing that he was exposed,  
18     clinically that's my opinion, that it was the lead  
19     from the water.

20     BY MR. ROGERS:

21           Q.     I know, but why doesn't he also have an  
22     elevated blood lead level at that time?

23           A.     Because he has acute exposures at low  
24     levels.   The lead is dropping down rapidly.   We've

1     relied on it for that purpose?

2           A.     Me, yes, because this was done by a  
3     graduate student now who is very familiar with  
4     computer -- computer mapping and things like that.  
5     She has no special expertise in lead poisoning.

6           Q.     I see.

7           A.     Doing it at my direction. I didn't do  
8     the geomapping.

9           Q.     I see. You reminded me of that.

10                  So, this document is actually a document  
11     that a graduate student who works with you did for  
12     you, is that right?

13           A.     Yes.

14           Q.     So, this was not a lawyer-created  
15     document, right?

16           A.     No, no. I -- well, I can't say that I  
17     did it. The graduate student did it. I was making  
18     a diligent attempt to understand sources of lead in  
19     the community. We also looked at the age of  
20     housing block by block in Genesee or in Flint.

21           Q.     Yep.

22           A.     Based on where those children lived.

23           Q.     I gotcha.

24           A.     I was trying to find if there was



1 Q. Is it based on this information Item 1  
2 through 3?

3 A. Not really, no.

4 Q. The fact is that you don't know what the  
5 water lead levels were for any of the houses in  
6 any -- of -- in any of the houses that any of these  
7 four bellwethers lived in, correct?

8 A. I do not. I do not have that data for  
9 any particular bellwether case. I don't have -- I  
10 did not see water drawn from their faucet or shower  
11 or toilet or kitchen sink or bathroom sink. I  
12 don't -- I didn't have measures of the water at  
13 their individual homes, you are correct.

14 Q. And you also don't have any information  
15 about what the actual composition of any of the  
16 service lines were in any of the houses in which  
17 the bellwether Plaintiffs lived, correct?

18 A. It doesn't matter to me at all. These  
19 kids are going all around Flint. They're going to  
20 school. They're going to grandmother's house.  
21 They're going to their aunt's house. We know that  
22 many of the service lines were polluted and  
23 contaminated and they fed multiple other -- other  
24 homes.

1           So, a service line could be contaminated  
2     and yet the pipe to the child's home might not be  
3     contaminated and yet the service line, the larger  
4     line, before it spreads out into multiple fingers  
5     going to multiple homes, could be contaminated in  
6     yet the home -- so, even though we don't have a  
7     measure from the child's kitchen sink, we know that  
8     the water in Flint was lead contaminated.

9           Q.     Doctor, my question simply is: You have  
10    no information and do not know what the lead --  
11    what the service lines were that serviced the four  
12    bellwether children's homes, what the composition  
13    of those lines were, correct?

14          MR. STERN: Objection; asked and answered,  
15    compound question.

16    BY THE WITNESS:

17          A.     When you say "the service line," if  
18    you're meaning the line directly to their home,  
19    directly to their kitchen sink, I don't have that  
20    data at that low level of water.

21    BY MR. ROGERS:

22          Q.     Yeah, I do. I mean the -- when I say  
23    "service lines," I mean the service lines that go  
24    into their homes from the other pipes.

1 A. Okay.

2 MR. STERN: What's the purpose of the break?

3 MR. ROGERS: Bathroom.

4 THE VIDEOGRAPHER: All right. We are now  
5 going off record. The time is 11:35.

6 (WHEREUPON, a recess was had  
7 from 11:35 to 11:39 a.m.)

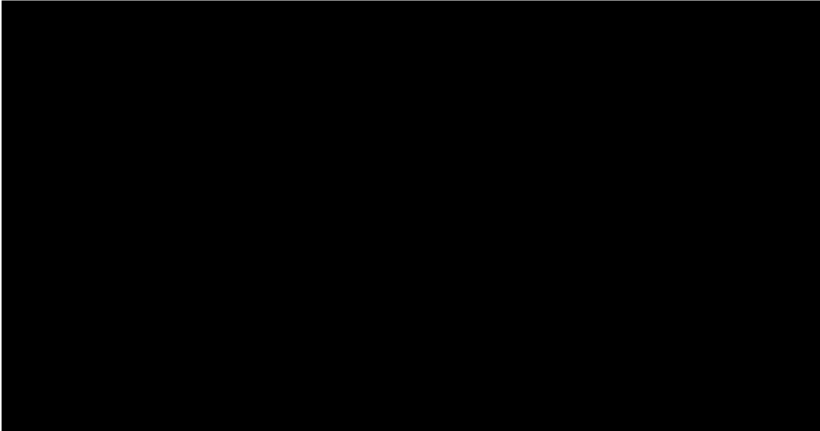
8 THE VIDEOGRAPHER: We are now back on the  
9 record. The time is 11:39. You may continue.

10 MR. ROGERS: Thanks, Jeff.

11 BY MR. ROGERS:

12 Q. Doctor, on the third paragraph from the

13  
14  
15  
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18



19 Do you see that?

20 A. You're talking about the last sentence  
21 in the third paragraph. Yes, I do see it now.

22 Q. That number there, the estimate of the  
23 lead concentration of 10 parts per billion, where  
24 does that come from?

1           A.     It's a measure -- I mean, some of the  
2     lead in the water was -- it's an exemplar.

3           Q.     Gotcha.

4           A.     Some of it was 15 parts per billion.  
5     Some of it was 2,000 parts per billion measured at  
6     the home of LeeAnne Walters, many thousands. I  
7     don't remember exactly.

8           Q.     I get you. So it's just --

9           A.     -- 10.

10          Q.     It's just an exemplar. It's just an  
11     exemplar to demonstrate a point that you're making,  
12     right?

13          A.     Yes.

14          Q.     Is that also true with the next full  
15     paragraph where it says, "If that child is exposed  
16     to this level of lead daily for three months, the  
17     child will ingest 900 micrograms of lead in total"?  
18     That's just another exemplar, it's not based on any  
19     specific thing having to do with these bellwethers,  
20     right?

21          A.     Correct.

22          Q.     Next page, 9, third paragraph, the first  
23     sentence, "Depending on these variables, the CDC  
24     reports that children may absorb between 50% and

1 100% of the lead they drink."

2 What CDC reports are you referring to  
3 there?

4 A. Well, I don't have it right in front of  
5 me, but it's one of the reports that I supplied to  
6 you.

7 Q. In the list of references that we just  
8 went through?

9 A. I believe so. In the EPA Report on the  
10 Environment also. I'm not sure. I'm not sure just  
11 which paper. We talked about so many hundreds of  
12 papers.

13 Q. Let me try to --

14 A. Go ahead.

15 Q. Let me try to help you.

16 There is a reference to a CDC paper in  
17 the ATSDR just above that sentence. Is that it?

18 A. I don't believe so.

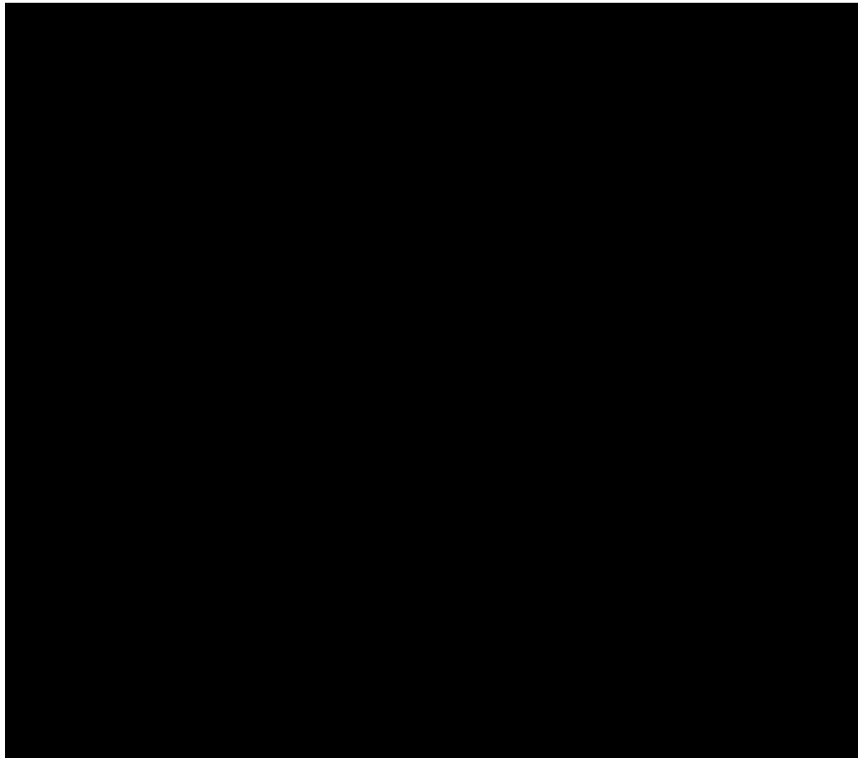
19 Oh, wait.

20 "According to the agency, the percentage  
21 of Pb that children absorb varies based on the  
22 above variables."

23 Yes, the ATSDTR would do that. And the  
24 ATSD -- the confusion I'm having is that the ATSDTR

1 suffered the negative cognitive complications  
2 described by Dr. Krishnan as being caused by lead  
3 exposure."

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14 What's the basis for that opinion?

15 A. Well, it's discussed below. The  
16 theories of Maureen Dennis who is a psychologist,  
17 and we described the lag effect.

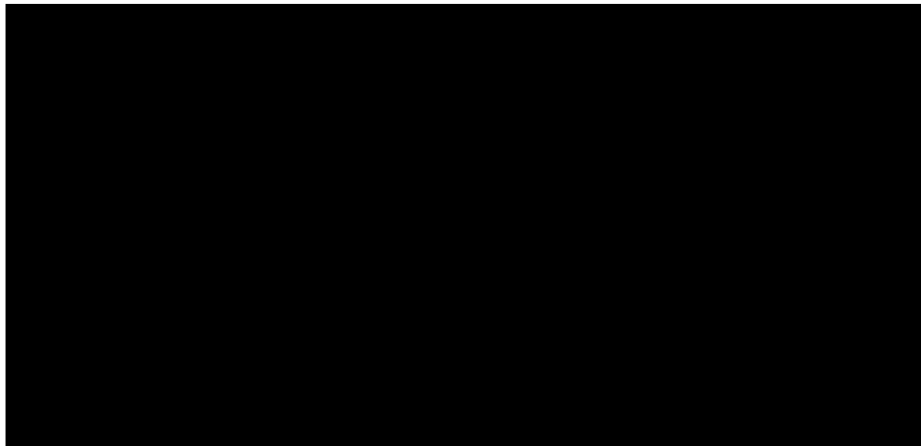
18 It's very typical not only in the  
19 literature but also in my own experience that  
20 children can easily -- children who are lead  
21 poisoned may easily learn to read, but when they  
22 read -- reach the 5th grade, they'll have trouble  
23 reading to learn, to understand the words that  
24 they're reading, that kind of lag effect.

1                   Also, in the 5th grade or so children  
2   who are -- may all of a sudden fall behind their  
3   peers because they have other deficits such as  
4   so-called executive functioning deficits where they  
5   can't organize their thoughts, they can't  
6   prioritize their thoughts or what the teacher is  
7   saying. They choose inappropriate behaviors at  
8   inappropriate times and the like.

9                   Everything that's subsumed under the  
10   term "executive functioning." I'm trying to keep  
11   it brief.

12                Q.    Would you turn to page 14, the last  
13   paragraph.

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20                   My question is from what to what,  
21   meaning what higher likelihood of experiencing  
22   these problems?

23                A.    Asking for a numerical number?

24                Q.    Yeah.

1 suffered the negative cognitive complications  
2 described by Dr. Krishnan as being caused by lead  
3 exposure."

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8 A. Yes, sir.

9 Q. Then you say in the next paragraph, last  
10 sentence, "Thus, it is also my opinion that as Emir  
11 ages, he will fall further behind his peers as he  
12 is confronted in school with more complex  
13 intellectual and academic challenges."

14 What's the basis for that opinion?

15 A. Well, it's discussed below. The  
16 theories of Maureen Dennis who is a psychologist,  
17 and we described the lag effect.

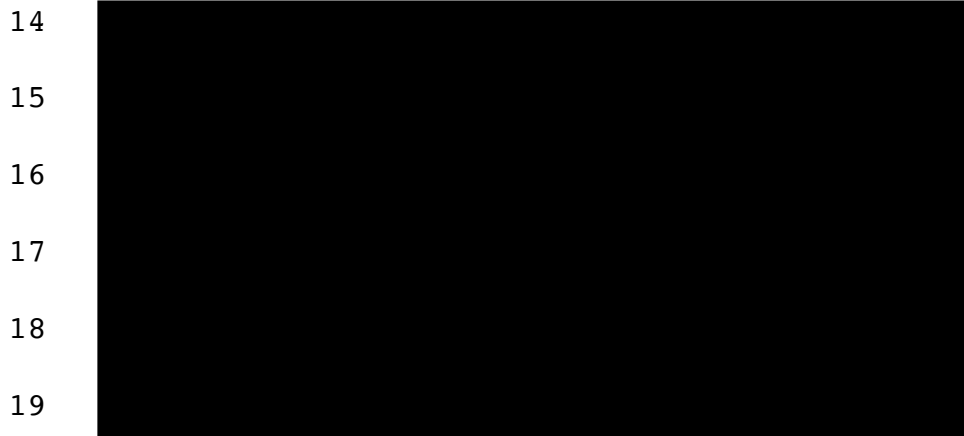
18 It's very typical not only in the  
19 literature but also in my own experience that  
20 children can easily -- children who are lead  
21 poisoned may easily learn to read, but when they  
22 read -- reach the 5th grade, they'll have trouble  
23 reading to learn, to understand the words that  
24 they're reading, that kind of lag effect.



1                   Also, in the 5th grade or so children  
2   who are -- may all of a sudden fall behind their  
3   peers because they have other deficits such as  
4   so-called executive functioning deficits where they  
5   can't organize their thoughts, they can't  
6   prioritize their thoughts or what the teacher is  
7   saying. They choose inappropriate behaviors at  
8   inappropriate times and the like.

9                   Everything that's subsumed under the  
10   term "executive functioning." I'm trying to keep  
11   it brief.

12                Q.    Would you turn to page 14, the last  
13   paragraph.



20                   My question is from what to what,  
21   meaning what higher likelihood of experiencing  
22   these problems?

23                A.    Asking for a numerical number?

24                Q.    Yeah.

1     else. I don't know if Corey will send it to me  
2     later, but that may be included but I haven't seen  
3     it as yet.

4           Q.     Paragraph 12, you've -- and for  
5     paragraphs basically 12 through 16, you provided to  
6     me either as cited in your report or as cited in  
7     that list of 35 scientific papers or the several  
8     that you told me about that you looked at before  
9     your last deposition, all of the books or treatises  
10    or scientific literature or articles that you  
11    relied upon for the opinions that you have in the  
12    case concerning these four bellwethers, right?

13          A.     Well, I did follow literature for 40  
14    years, but I think there's a good summary and  
15    hundreds of articles presented that I did rely on.  
16    But, so, the answer is yes, I did provide you what  
17    I could.

18          Q.     You didn't have any written  
19    correspondence or e-mail correspondence with any of  
20    the other bellwether experts in the case, did you,  
21    which is requested in paragraph 23?

22          A.     Nothing about the bellwethers at all.

23          MR. ROGERS: Okay. I think that does it.  
24    Thanks again. I am finished with your deposition,

1 Dr. Bithoney. It's been a pleasure, sir.

2 THE WITNESS: Thank you.

3 THE VIDEOGRAPHER: All right. If there is

4 nothing else, this concludes the deposition of

5 Dr. William Bithoney. The time is 12:15, and we

6 are now off record.

7 (Time Noted: 12:16 p.m.)

8 FURTHER DEPONENT SAITH NAUGHT.

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I, CORINNE T. MARUT, C.S.R. No. 84-1968,  
Registered Professional Reporter and Certified  
Shorthand Reporter, do hereby certify:


That previous to the commencement of the  
examination of the witness, the witness was duly  
sworn to testify the whole truth concerning the  
matters herein;

That the foregoing deposition transcript  
was reported stenographically by me, was thereafter  
reduced to typewriting under my personal direction  
and constitutes a true record of the testimony  
given and the proceedings had;

That the said deposition was taken  
before me at the time and place specified;

That the reading and signing by the  
witness of the deposition transcript was agreed  
upon as stated herein;

That I am not a relative or employee or  
attorney or counsel, nor a relative or employee of  
such attorney or counsel for any of the parties  
hereto, nor interested directly or indirectly in  
the outcome of this action.



CORINNE T. MARUT, Certified Reporter

(The foregoing certification of this  
transcript does not apply to any  
reproduction of the same by any means, unless under  
the direct control and/or supervision of the  
certifying reporter.)

INSTRUCTIONS TO WITNESS

Please read your deposition over carefully and make any necessary corrections. You should state the reason in the appropriate space on the errata sheet for any corrections that are made.

After doing so, please sign the errata sheet and date it.

You are signing same subject to the changes you have noted on the errata sheet, which will be attached to your deposition.

It is imperative that you return the original errata sheet to the deposing attorney within thirty (30) days of receipt of the deposition transcript by you. If you fail to do so, the deposition transcript may be deemed to be accurate and may be used in court.

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UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

----- )  
 ) Civil Action No.  
 ) 5:16-cv-10444-  
In re: Flint Water Cases ) JEL-MKM  
 ) (consolidated)  
 )  
----- ) Hon. Judith E. Levy  
 ) Mag. Mona K. Majzoub  
Elnora Carthan, et al. v. )  
Governor Rick Snyder, et al. ) Civil Action No.  
 ) 5:16-cv-10444-JEL-  
----- ) MKM

HIGHLY CONFIDENTIAL - RESTRICTED

AFFIDAVIT

I, WILLIAM BITHONEY, M.D., the undersigned  
affiant, being first duly sworn, on oath say that  
the testimony given at my deposition at the time  
and place aforesaid is the truth, the whole truth,  
and nothing but the truth, and that I have read the  
foregoing transcript consisting of Pages 295 to 466  
inclusive, and do subscribe and make oath that the  
same is a true, correct, and complete transcript of  
my deposition so given as aforesaid, and includes  
changes, if any, so made by me.

FURTHER AFFIANT SAITH NAUGHT.

\_\_\_\_\_  
AFFIANT, WILLIAM BITHONEY, M.D.

SUBSCRIBED AND SWORN TO before me  
this       day of       , A.D. 20 .  
\_\_\_\_\_  
Notary Public